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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,100	07/24/2003	David T. Engquist	7420-US1	2252

7590 03/18/2004

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EXAMINER

CHUNG TRANS, XUONG MY

ART UNIT	PAPER NUMBER
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2833

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/627,100	<b>Applicant(s)</b> ENGQUIST ET AL.	
	<b>Examiner</b> Xuong M. Chung-Trans	<b>Art Unit</b> 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. This application has been examined. Claims 1-17 are pending in this application.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keldsen et al. (USPN 6,007,347) in view of Tamaki et al. (USPN 6,661, 318) .

Keldsen discloses an apparatus and method comprising: a circuit board having a front edge and a major surface (40), the major surface having a recessed portion (34) open to the front edge (board edge, col. 2, line 55-58), the recessed portion being defined by a stop surface (36), opposing side surfaces(44,46), and a bottom surface (lower surface); a plurality of conductive pads (60) disposed on the major surface; and a conductive layer (56) disposed on at least a portion of the bottom surface; the recessed portion adapted to receive a multiple conductor ribbon cable to provide thereby low-profile communication of the multiple conductors ribbon cable and the circuit board, the multiple conductor ribbon cable having a plurality of first conductors (72) and a plurality of second conductors (74) respectively associated with the plurality of first conductor; the plurality of conductive pads (60) being adapted to receive respective first conductors (70) of the multiple conductor ribbon cable, said conductive layer adapted to receive respective second conductors (74) of the multiple conductor ribbon cable. Keldsen does not explicitly disclose a multiple conductor ribbon cable. Keldsen, however, does

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disclose that any type of coax cable connector can be used. Therefore, it would have been obvious to one skilled artisan at the time the invention was made to employ a multiple conductor ribbon cable as claimed because Keldsen teaches or suggests that any type of coax cable can be used. Keldsen does not explicitly disclose a recessed portion open to the front edge. Keldsen does teaches that the slot may be position to open to a board edge, omitting the rounded end, so that the cable can be enter the slot from the edge. Tamaki, also discloses exposed connection portion (204) open to the edge (fig. 4a-e) so that the cable end in slot is straight and level and not bent.

Therefore, it would have been obvious to one skilled artisan at the time the invention was made to employ such a recessed portion open to the front edge so that cable end in recessed portion is straight and level and not bent.

Keldsen, further teaches that the circuit board includes a conductive sheet (62) spaced apart from the major surface and the bottom surface, and wherein the apparatus further comprises: a plurality of plated through-holes (col.3, line 4) extending at least between the bottom surface and the conductive sheet, each of the plurality of plated through-holes being electrically connected to the conductive sheet and the conductive layer (col. 4, line 8-10); wherein the stop surface is non-conductive, and wherein the conductive layer is defined by a non-conductive portion of the bottom surface abutting the stop surface, the non-conductive portion extending at least a length of the stop surface between the opposing sides; wherein the multiple conductor ribbon cable is a multiple conductor coaxial cable, wherein each of the plurality of first conductors is a center conductor of the multiple conductor coaxial cable, and wherein each of the

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plurality of second conductors is an outer conductor of the multiple conductor coaxial cable; wherein each of the plurality of center conductors (70) is surrounded by an insulator layer (72), and wherein the insulator layer surrounding each of the center conductors substantially abuts the stop surface; wherein a depth of the recessed portion is such that a respective free end of each of the plurality of center conductors is 10 substantially parallel with the major surface of the circuit board.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xuong M. Chung-Trans whose telephone number is (571) 272-2002. The examiner can normally be reached on Monday-Friday from 9:30am to 1:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley, can be reached on (571) 272-2800 extension 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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X. Chung-Trans



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